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UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

READING, PA.

PLUMBING, HOUSE DRAINAGE, PRIVIES, AND CESSPOOLS.

RULE 1. Certificate of license.—It shall not be lawful for any person or persons, firm or corporation to carry on or work at the business of plumbing or house drainage in the city of Reading until a certificate of license to engage in or work at said business has been granted said person or persons by the board of health, nor until they have registered as such in the office of the Board of Health of the City of Reading.

RULE 2. Board of Examiners.—The mayor shall appoint a board of examiners to examine all applicants for license under the provisions of these rules. Said board shall consist of the superintendent of the board of health or the health officer, one plumbing inspector, and two competent plumbers in no way connected with the city government.

Applications.—All and every person or persons engaged or engaging in the business or work of plumbing or house drainage in the city of Reading shall apply in writing to the said board of health for a certificate or license; and if after proper examination, made by the board of examiners, such person or persons so applying shall be found competent, the same shall be certified to the board of health, who shall thereupon issue a certificate or license to such person or persons, which shall for the period of one calendar year or fractional part thereof next ensuing the date of such examination entitle him or them to engage in or work at the business of plumbing and house drainage.

Rules, regulations, etc.—The board of examiners shall make all reasonable rules, regulations, and examinations, which shall be approved by the said board of health.

Examinations and fees.—An examination of any one member of a firm or corporation, or of the superintendent or foreman therefor, shall be deemed sufficient. Said person or persons, firm or corporation, engaged or engaging in the business of plumbing or house drainage, shall pay for each examination the sum of \$5, and each journeyman or person engaged in the work shall pay the sum of 50 cents, which shall be paid into the city treasury for the use of the city of Reading. The proper officers of the said city of Reading are hereby authorized to pay to the plumbers acting on said board of examiners the sum of \$5 per day for each day or session actually employed.

Place of business and sign.—Every registered master plumber shall have a bona fide place of business in the city of Reading, and shall display on the front of his or their place of business a sign, "Registered plumber," bearing the name or names of the person, firm, or corporation, in letters not less than 3 inches high.

Registration.—No person other than a registered master plumber shall be allowed to carry on or engage in the business; nor shall any person or persons expose a sign of plumbing or house drainage, or any advertisement pertaining thereto, unless he or they have first secured a license or certificate and have been registered in the office of the Board of Health of the City of Reading; nor shall any person or persons other than a registered master plumber, or person in his or their employ, or under his or their supervision, be allowed to alter, repair, or make any connection with any drain, soil, or vent pipes, or any pipe connected therewith.

Notice of change of place of business.—Every registered master plumber, firm, or corporation shall give immediate notice of any change in his, their, or its place of business, and upon his, their, or its retirement from business shall surrender his, their, or its certificate of registry to the board of health. Every person, firm, corporation, or representative thereof, in registering, shall give the full name or names of the person, firm, or officers, names of the corporation, for which he or they shall register.

Expiration of licenses, etc.—At the expiration of each calendar year said certificate of license shall be null and void. A licensed master or journeyman plumber desiring to continue in or work at the business of plumbing and house drainage for the ensuing year shall, between the 1st and 31st days of December of each and every year, surrender the said certificate or license for the current year to the said board of health, and reregister his, their, or its name or names, and the business or home address, upon such form or forms as may, from time to time, be furnished by said board of health.

Reregistration—Fees—Register.—A reexamination will not be necessary for reregistration unless the licensed master or journeyman plumber should fail to make application for reregistration at the specified time. The sum of \$1 shall be paid by the master plumbers, firms, or corporations, and the sum of 25 cents by journeyman plumbers, for reregistration, which sum shall be paid into the city treasury for the use of the city. A register of all such applicants and the license or certificates issued shall be kept in said board of health, which said register shall be open to the inspection of all persons interested therein.

Work in other city.—Any person, firm, or corporation holding a license or certificate granted by any first, second, or third class city of this Commonwealth, to engage in or work at the business of plumbing and house drainage, desiring to do plumbing and drainage work in the city of Reading, shall, without examination, be registered before entering upon such work: *Provided, however,* That such registration shall be restricted and limited to such plumbing and drainage as he, they, or it shall have contracted for at the time of registry. On the completion of such contract or contracts, the registration of such person, firm, or corporation shall be null and void, and no further permit shall be issued to such person, firm, or corporation until he, they, or it shall have first registered his or its name, or their names and addresses, as hereinbefore provided.

RULE 3. *Storm sewer connections.*—Storm sewer connections shall be conducted only under and in accordance with the following rules, regulations, and requirements, namely:

RULE 4. *Plans and specifications.*—Plans and specifications must be filed before any work is commenced, and will be approved or rejected within 24 hours; the plans and specifications to be furnished by the board of health.

RULE 5. *House drains must be of extra heavy cast-iron pipe, as per table:*

2-inch pipe.....	pounds per linear foot..	5½
3-inch pipe.....	do....	9½
4-inch pipe.....	do....	13
5-inch pipe.....	do....	17
6-inch pipe.....	do....	20
7-inch pipe.....	do....	27
8-inch pipe.....	do....	33
10-inch pipe.....	do....	45
12-inch pipe.....	do....	54

Extra heavy cast-iron pipe must be used throughout the building and carried 5 feet outside the foundation wall, and all pipe arrangement shall be as direct as possible. Changes in direction must be made with Y branches, $\frac{1}{8}$ or $\frac{1}{4}$ bends above and below ground, and where such pipes pass through a new foundation wall a relieving arch shall be built over it, with 2-inch space on either side of main pipe.

The size of the house drain shall be determined by the area of the whole building and paved surfaces to be drained, according to the following table, if iron pipe is used. If the pipe is terra cotta, the diameter shall be one size larger for the same amount of area drainage:

Diameter.	square feet drainage area..	Fall $\frac{1}{4}$ inch per foot.	Fall $\frac{1}{2}$ inch per foot.
4-inch.....	1,800	2,500	
5-inch.....	3,000		4,500
6-inch.....	5,000		7,500
8-inch.....	9,100		13,600
10-inch.....	14,000		20,000

RULE 6. The main drain shall not be less than 4 inches in diameter, and it must be provided with a horizontal trap, placed immediately inside the cellar wall. The

trap must have two clean outs calked in. A back-pressure trap must be placed next to horizontal trap.

RULE 7. House drains must, wherever possible, be given an even grade to the main sewer not less than a quarter inch per foot.

RULE 8. When the main sewer is not located on street, house drains must be constructed on the outside of buildings and branch into each house separately. In no case will a sewer be permitted to run from one house to another through cellars.

Drains outside of buildings.—Where the ground is of sufficient solidity for a proper foundation, cylindrical terra-cotta pipe of best quality, free from flaws, splits, or cracks, perfectly burned and well glazed over the entire inner and outer surfaces, may be used, if laid on a smooth bottom, with a special groove cut in the bottom of the trench for each hub, in order to give the pipe a solid bearing on its entire length, and the soil well rammed on each side of the pipe. The spigot and hub ends shall be connected. The space between the hub and pipe must be thoroughly filled with cement mortar, made of equal parts of the best American natural cement and bar sand, thoroughly mixed dry, and enough water added afterwards to give proper consistency. The mortar must be mixed in small quantities and used as soon as made. The joints must be thoroughly wiped out and pointed, and all mortar that may be left inside removed and the pipe left clean and smooth throughout, for which purpose a swab may be used. It must not be laid closer than 5 feet to any exterior wall of a building, nor less than $3\frac{1}{2}$ feet below the surface of the ground, nor where the sewer passes near a well, nor will it be allowed in bad or made ground.

RULE 9. *Yard and area drains.*—All yards, areas, and courts must be drained. Tenement houses and lodging houses must have the yards, areas, and courts drained into storm sewers. The drains, when sewer connected, must have connection of not less than 4 inches in diameter.

RULE 10. Rain-water leaders must not be used as soil, waste, or vent pipes, or such pipes be used as a leader.

All buildings must be provided with proper metallic leaders for conducting water from the roofs in such manner as shall protect the walls and foundations of said buildings from injury. In no case shall the water from said leaders be allowed to flow upon the sidewalks, but the same shall be conducted by pipe or pipes to the storm sewer. If there is no sewer in the street upon which such buildings front, then the water from said leaders shall be connected by proper pipe or pipes below the surface of the sidewalk to the street gutter.

RULE 11. *Material for inside and outside leaders.*—Inside leaders must be constructed of cast iron, wrought iron, or steel, with roof connections made gas and water tight by means of heavy copper drawn tubing slipped into the pipe. Outside leaders may be of sheet metal, but must connect with house drain by means of a cast-iron pipe extended vertically 5 feet above grade level where the building is located along public driveways or sidewalks. Where the building is located off building line and not liable to damage, the connections shall be made with iron pipe extending at least 1 foot above grade level.

RULE 12. *The use of storm sewers.*—The storm sewer is constructed for storm sewage only; and in no case will any plumbing fixture be allowed to connect with storm sewers.

RULE 13. *Rules regulating house sewerage and drainage.*—The construction of plumbing, house drainage, and cesspools shall be conducted only under and in accordance with the following rules, regulations, and requirements, namely:

RULE 14. *Plans and specifications.*—There shall be a separate plan for each building, public or private, or any addition thereto or alterations thereof, accompanied by specifications, showing the location, size, and kind of pipe, traps, closets, and fixtures to be used, which plans and specifications shall be filed with the board of health. The plans and specifications shall be furnished by the architect, plumber, or owner, and filed by the plumber. All applications for change in plan must be made in writing.

RULE 15. *Filing plans and specifications.*—Plumbers, before commencing the construction of plumbing work in any building in the city of Reading (except in the case of repairs, which are here defined to relate to the mending of leaks in soil, vent, or waste pipes, faucets, valves and water-supply pipes, and shall not be construed to admit of the replacing of any fixtures, such as water-closets, bathtubs, washstands, sinks, etc., or the respective traps for such fixtures), shall submit to the board of health plans and specifications, legibly drawn in ink, on blanks to be furnished by the board of health. Where two or more buildings are located together and on the same street, and the plumbing work is identical in each, one plan will be sufficient for six houses. Plans will be approved or rejected within 24 hours after they are received.

RULE 16. *Duties of owners and plumbers in constructing drains, etc.*—It shall be the duty of every person constructing or owning any drain, soil pipe, passage, or connection

between a sewer and any ground, building, erection, or place of business, and in like manner the duty of the owners of all grounds, buildings, erections, and all parties interested therein or thereat, to cause and require that such drain, soil pipe, passage, or connection shall be adequate for its purpose, and shall at all times allow to pass freely all material that enters or should enter the same; and no change of drainage, sewerage, or the sewer connections of any house shall be permitted, unless notice thereof shall have been given to the board of health, and assent thereto obtained in writing.

RULE 17. *Inspection and approval.*—Drainage, sewerage, or plumbing work must not be covered or concealed in any manner until after it is inspected and approved by the board of health. Notice must be given said board, upon blanks to be furnished by them, when the work is sufficiently advanced for such inspection, when it shall be the duty of the proper officers to inspect the same within three days after the receipt of said notice.

RULE 18. *Material of house drains.*—The main drain system of every house or building shall be separately and independently connected with the street sewer, where such sewer exists, except where one building exists or is erected in the rear of another, on an interior lot, of single ownership, and no private sewer is available, or can be made for the rear building through an adjoining alley, courtyard, or driveway, the house drain from the front building may be extended to the rear building, and the whole be considered as one house drain. Where it is necessary to construct a private sewer to connect with sewer on adjacent street, such plans may be used as may be approved by the board of health, but in no case shall joint drainage be laid in cellars, parallel with street or alley.

House drains or soil pipes laid beneath the floor must be extra heavy cast iron (as per table in rule 26), with leaded and calked joints, and carried 5 feet outside the cellar wall. All drains or soil pipes connected with the main drain, where it is above the cellar floor, shall be of extra heavy cast-iron pipe, with leaded and calked joints, or heavy wrought-iron pipe, with screw joints properly secured, and carried 5 feet outside cellar wall, and all arrangement of soil or waste pipes shall be as direct as possible. Wrought-iron pipes shall be galvanized. Changes of direction on pipes shall be made with Y branches, both above and below the ground, and where such pipes pass through a new foundation wall, a relieving arch shall be built over it, with 2-inch space on each side of main pipe.

RULE 19. *Location of main trap.*—The house drain must be provided with a horizontal trap, placed at curb, or, where conditions make it necessary, immediately inside the cellar wall. The trap must be joining alley, courtyard, or driveway, the house drain from the front building may be extended to the rear building, and the whole be considered as one house drain. Where it is necessary to construct a private sewer to connect with sewer on adjacent street, such plans may be used as may be approved by the board of health.

RULE 20. *Fresh-air inlet.*—A fresh-air inlet must be connected with the house drain just inside the house trap. Where underground, it must be of extra heavy cast iron. Said inlet must lead to the outer air, and finish with an approved automatic device at curb or at a point approved by the plumbing inspector. The fresh-air inlet must be of the same size as the drain up to 4 inches. For 5 and 6 inch drains it must not be less than 4 inches in diameter; for 7 and 8 inch drains, not less than 6 inches in diameter or its equivalent; and for larger drains, not less than 8 inches in diameter or its equivalent.

RULE 21. *Laying of house sewers and drains.*—House sewers and house drains must, where possible, be given an even grade to the main sewer of not less than one-quarter inch per foot.

RULE 22. *Location of house sewer.*—When main sewer is not located on the street, house sewers may be constructed on outside of buildings and branch into each house separately, and in no case will a sewer from one house to another be permitted to run through cellars.

RULE 23. *Drains outside of buildings.*—Where the ground is of sufficient solidity for a proper foundation, cylindrical terra-cotta pipe, of the best quality, free from flaws, splits, or cracks, perfectly burned and well glazed over the entire inner and outer surfaces, may be used if laid on a smooth bottom, with a special groove cut in the bottom of the trench for each hub in order to give the pipe a solid bearing in its entire length and the soil well rammed on each side of the pipe. The spigot and hub ends shall be connected. Space between the pipe and the hub must be thoroughly filled with cement mortar, made of equal parts of the best American natural cement and bar sand, thoroughly mixed dry, and enough water afterwards added to give proper consistency. The mortar must be mixed in small quantities and used as soon as made. The joints must be carefully wiped out and pointed, and all mortar that may be left inside removed and the pipe left clean and smooth throughout,

for which purpose a swab may be used. It must not be laid closer than 5 feet to any exterior wall of a building nor less than $3\frac{1}{2}$ feet below the surface of the ground, nor where the sewer passes near a well, nor will it be allowed in bad or made ground.

RULE 24. Material for sewers between buildings.—Where a sewer is laid between buildings, in a passageway, alley, or courtyard, at a less distance than 5 feet from the buildings, it must be constructed of extra heavy cast-iron pipe for a distance corresponding to the length of the foundation of said buildings.

RULE 25. Floor drains.—Floor or other drains will only be permitted when it can be shown, to the satisfaction of the board of health, that their use is absolutely necessary, and arrangements made to maintain a permanent water seal in the traps, and be provided with check or back-water valves.

RULE 26. Weight and thickness of cast-iron soil pipe.—All cast-iron pipe must be sound, free from holes, and of a uniform thickness, known as "extra heavy" pipe, and corresponding fittings will be required. The pipe must be tested to 50 pounds water pressure, and marked with the maker's name. Pipes shall weigh as follows, namely:

2-inch pipe.....	pounds per linear foot..	5 $\frac{1}{2}$
3-inch pipe.....	do.....	9 $\frac{1}{2}$
4-inch pipe.....	do.....	13
5-inch pipe.....	do.....	17
6-inch pipe.....	do.....	20
7-inch pipe.....	do.....	27
8-inch pipe.....	do.....	33 $\frac{1}{2}$
10-inch pipe.....	do.....	45
12-inch pipe.....	do.....	54

RULE 27. Subsoil drains.—Subsoil drains must discharge into a sump or receiving tank, the contents of which must be lifted and discharged into the drainage system above the cellar floor by some approved method. Where directly sewer connected, they must be cut off from the rest of the plumbing system by a brass flap valve on the inlet to the catch basin, and the trap on the drain from the catch basin must be water supplied, as required for cellar drains.

RULE 28. Use of old house drains and sewers.—Old house drains and sewers may be used, in connection with new buildings or new plumbing, only when they are found on examination by the board of health to conform in all respects to the requirements governing new sewers and drains. All extensions to old house drains must be of extra heavy cast-iron pipe.

RULE 29. Exhaust from steam pipes, etc.—No steam exhaust, blow-off, or drip pipe shall connect with the sewer or house drain, soil pipe, waste or vent pipe. Such pipes must discharge into a tank or condenser, from which suitable outlet to the sewer shall be made. Such condensers shall be water-supplied to help condensation and protect the sewer, and shall also be supplied with a relief vent to carry off dry steam.

RULE 30. Diameter of soil pipes.—The smallest diameter of any sewer pipe permitted to be used shall be 4-inch. The size of soil pipes must not be less than those set forth in the following table:

Size of pipe.	Soil and waste combined.		Soil pipe alone.	
	Fixtures.		Water-closets.	
Branch.	Main.	Branch.	Main.	
Maximum number of fixtures connected to—				
4-inch.....	48	96	8	16
5-inch.....	96	192	16	32
6-inch.....	268	336	34	68

If the building is 6 and less than 12 stories in height, the diameter shall not be less than 5 inches; if more than 12 stories, it shall be 6 inches in diameter. In a building 6 or more stories in height, with fixtures located below the sixth floor, soil pipe 4 inches in diameter will be allowed to extend through the roof, provided the number of fixtures does not exceed the number given in the table.

All soil pipes must extend at least 2 inches above the highest window and must not be reduced in size. Traps will not be permitted on main, vertical, soil, or waste line. Each house must have a separate line of soil and vent pipes.

No soil or waste line shall be constructed on the outside of any building.

Fixtures with—

- 1½-inch traps count as one fixture.
- 1½-inch traps count as one fixture.
- 2-inch traps count as two fixtures.
- 2½-inch traps count as three fixtures.
- 3-inch traps (water-closets) count as four fixtures.
- 4-inch traps count as five fixtures.

RULE 31. Changes in direction.—All sewer, soil, and waste pipe must be as direct as possible. Changes in direction must be made with Y or half Y branches, or one-eighth bends. Offsets in soil or waste pipes will not be permitted when they can be avoided; nor, in any case, unless suitable provision is made to prevent an accumulation of rust or other obstruction. Offsets shall be made with 45° bends or similar fittings. The use of T-Y's (sanitary T's) will be permitted on upright lines only.

RULE 32. Joints for soil and waste pipes.—Joints in cast-iron pipes and soil and waste pipes must be so filled with oakum and lead, and hand calked as to make them gas-tight. Connections of lead and cast from pipes must be made with brass sleeve or ferrule, of the same size as the lead pipe inserted in the hub of the iron pipe, and calked with lead. The lead pipe must be attached to the ferrule by wiped joint. Joints between lead and wrought-iron pipe must be attached to the nipple by wiped joint. All connections of lead waste pipe must be made by means of wiped joints.

RULE 33. Traps for bath tubs, water-closets, etc.—Every sink, bath tub, basin, water-closet, slop hopper, or fixture having a waste pipe, must be furnished with a trap, which shall be placed as close as practicable to the fixture that it serves, and in no case shall they be more than 1 foot from said fixture. Waste pipe from bath tub or other fixtures must not be connected with a water-closet trap.

RULE 34. Size of horizontal and vertical waste-pipe traps and branches:

Horizontal and vertical:

	number of small fixtures..	1
1½ inches.....	do.....	2
2 inches.....	do.....	3- 8
2½ inches.....	do.....	9-20
3 inches.....	do.....	21-44

If building is 10 or more stories in height, the vertical waste pipe shall not be less than 3 inches in diameter. The use of wrought-iron pipe for waste pipe, 2 inches or less in diameter, is prohibited.

The size of traps and waste branches for a given fixture shall be as follows:

Kind of fixtures.	Size in inches.	
	Trap.	Branch.
Water-closet.....	3	4
Slop sink with trap combined.....	3	3
Slop sink, ordinary.....	2	2
Pedestal urinal.....	3	3
Floor drain or wash.....	4	4
Yard drain or catch basin.....	4	4
Urinal trough.....	2	2
Laundry trays (2 or 5).....	2	2
Combination sink and tray (for each fixture).....	1½	2
Kitchen sinks (small) for dwellings.....	1½	1½
Kitchen sinks (large), hotels, restaurants, grease trap.....		2
Pantry sinks.....	1½	1½
Wash basin, one only.....	1½	1½
Bath tubs, 4 by 10 inches, drum tap.....	1½	1½
Shower baths.....	1½	1½
Shower baths (floor).....	2	2
Sitz baths.....	1½	1½
Drinking fountains.....	1½	1½

RULE 35. Overflow pipes.—Overflow pipes from fixtures must, in all cases, be connected on the inlet side of traps.

RULE 36. Sediment pipes.—Sediment pipes from kitchen boilers must not be connected on the outlet side of traps.

RULE 37. Setting of and sizes of traps.—All traps must be well supported and set true with respect to their water levels.

The sizes for traps must not be less than those given in the following:

Traps for:

Water-closets.....	inches in diameter..	4
Slop sinks	do.....	1½-3
Kitchen sinks.....	do.....	1½
Wash trays.....	do.....	2
Bowl urinals.....	do.....	1½
Washstands	do.....	1½

All bath tubs shall be supplied with drum trap, not less than 3 inches in diameter, with 3-inch trap screws on floor line. In case where an additional fixture is required in a building, and it is impossible to get revent pipe for the trap, the board of health shall designate the kind of trap to be used. This shall not be construed to allow traps without revents in new buildings. Under no conditions will an antisiphon trap be allowed if the combined horizontal and vertical run is over 30 feet. An antisiphon trap can not be used above first floor unless the waste enters soil pipe on same floor that fixture is located.

RULE 38. Safe and refrigerator waste pipes.—Safe waste pipes must not connect directly with any part of the plumbing system. Safe waste pipes must discharge over an open, water-supplied, publicly placed, ordinarily used sink, placed not more than 3½ feet above the cellar floor. The safe waste from a refrigerator must be trapped at the bottom of the line only, and must not discharge upon the ground floor, but over an ordinary portable pan, or some properly trapped, water-supplied sink, as above. In no case shall the refrigerator waste pipe discharge over a sink located in a room used for living purposes.

The branches on vertical lines must be made by Y fittings, and carried to the safe with as much pitch as possible. Where there is an offset on a refrigerator waste pipe in cellar there must be clean outs to control the horizontal part of the pipe.

In tenement and lodging houses the refrigerator waste pipes must extend above the roof, and not be larger than 1½ inches, nor the branches less than 1¼ inches. Refrigerator waste pipes, except in tenement houses, and all safe waste pipes must have brass flap valves at their lower ends. Lead safes must be graded and neatly turned over beveled strips at their edges.

RULE 39. Material for vent pipes.—All vent pipes must either be of lead, brass, enameled iron or galvanized iron pipe.

RULE 40. Ventilation of traps and soil lines.—Traps shall be protected from siphonage or air pressure by special vent pipes, of a size not less than the following tables:

Size of pipe.	Maximum developed length in feet—mains.	Number of traps vented.	
		Branch.	Main vert.
1½ inch vent.....	20	1
1½-inch vent.....	40	1 2
2-inch vent.....	65	1 10	1 20
2½-inch vent.....	100	1 20	1 40
3-inch vent.....	(?)	1 60	1 100

¹ Or less.

² 10 or more stories.

The branch vent pipes shall not be less than the following sizes:

1½-inch traps.....	inches in diameter..	1½
1½-inch to 2½-inch traps.....	do.....	1½
3 to 4 inch traps.....	do.....	2
Traps 5 inches or over.....	One-half their diameter.	

Where 2 or more water-closets are placed side by side on a horizontal branch, the branch line shall have a relief extended as a loop vent. A pipe 2 inches in diameter will be sufficient as a loop vent for 2 closets. A pipe 3 inches in diameter shall be used as a relief for 3 or 4 closets; and where more than 4 closets are located on the same branch, the relief shall not be less than 4 inches in diameter. All house drains and soil lines on which a water-closet is located must have a 4-inch main vent line. Where an additional closet is located in the cellar or basement, and within 10 feet of main soil or vent line, a 2-inch relief vent will be required for said closet, but where it is

more than 10 and less than 20 feet, a 3-inch vent line will be required. Where it is over 20 feet, a 4-inch vent line will be required. Relief vent pipes for water-closets must not be less than 2 inches in diameter for a length of 40 feet and not less than 3 inches in diameter for more than 40 feet.

No revent from traps under bell traps will be required. Any building having a sewer connection with a public or private sewer used for bell-trap connections or floor drainage only, a 2-inch relief line must be extended to the roof of building from rear end of main drain.

A floor trap for a shower shall be vented, unless located in cellar or ground floor, the paving of which renders the trap inaccessible. If the number of these fixtures on a branch is 2 or more, the waste line shall be extended as a loop vent instead of back venting the separate traps; and when located in basement floor, they shall be provided with a removable strainer or clean-out.

Back vent pipes, from traps above the floor, must either be connected with crown of trap with ground-in brass coupling, or, if connected solidly to trap, must have a ground-in brass coupling at wall.

RULE 41. Horizontal vent pipes.—Where rows of fixtures are placed in a line, fittings of not less than 45° to the horizontal must be used on vent lines to prevent filling with rust or condensation; except on brick or tile walls, where it is necessary to channel same for pipes, 90° fittings will be allowed. Trapped vent pipes are strictly prohibited. No vent pipe from house side of any trap shall connect with ventilation pipe or with sewer, soil, or waste pipe.

Vent pipes from several traps may be connected together, or may be carried into the main vent line above the highest fixture. Where one vertical vent line connects with another, a Y fitting must be used. Branch vent pipes must be connected as near to crown of trap as possible.

RULE 42. Offsets on vent lines.—All offsets on vent lines must be made at an angle of not less than 45° to the horizontal, and all lines must be connected at the bottom with a soil or waste pipe, or the drain, in such manner as to prevent the accumulation of rust, scale, or condensation.

RULE 43. Connections for closet vents.—Rubber connections for back vents will not be permitted.

RULE 44. Ventilators prohibited.—No brick, sheet metal, or earthenware flue, or chimney flue, shall be used as a sewer ventilator or to ventilate any trap, drain, soil, or waste pipe.

RULE 45. Soldering nipples.—Soldering nipples must be extra heavy brass, or brass pipe, iron pipe size.

RULE 46. Brass clean-outs.—Brass screw caps for clean-outs must be extra heavy, not less than one-eighth of an inch thick. The screw cap must have a solid, square nut, not less than 1 inch high. The body of clean-out ferrule must at least equal in weight and thickness the calking ferrule for the same size pipe.

RULE 47. Diameter and weight of ferrules.—Brass ferrules must be of best quality, bell-shaped, extra heavy cast brass, not less than 4 inches long, and 2½ inches, 3½ inches, and 4½ inches in diameter and not less than the following weights: Diameter 2½ inches, weight 1 pound; diameter 3½ inches, weight 1 pound 12 ounces; diameter 4½ inches, weight 2 pounds 8 ounces.

RULE 48. Setting of fixtures.—The closet and all other fixtures must be set open, and free from all inclosing wood or other work. Where water-closets will not support rim seat, the seat must be supported on galvanized-iron legs, and a drip tray must be used, which tray must be porcelain, enameled on both sides, and secured in place. In tenement houses and lodging houses sinks must be entirely open, set on iron legs or brackets, without any inclosing wood or other work.

RULE 49. Closets prohibited.—Pan, plunger, or hopper closets will not be permitted in any building. No range closet, either wet or dry, nor an evaporating system of closets, shall be constructed or allowed inside of any building.

A separate building constructed especially for the purpose must be provided, in which such range closets shall be set.

RULE 50. Water-closet connections with soil pipes.—All earthenware traps must have heavy brass floor plates, soldered to the lead bends and bolted to the trap flange, and the joint made permanently secure and gas-tight by means of grafting wax or other approved substance.

RULE 51. Water-closets, where located.—Water-closets must not be located in sleeping apartments, nor in any room or compartment which has not direct communication with external air, by window of at least 4 square feet, or approved air shaft.

RULE 52. Water-closets, how supplied.—No water-closets, except flush meters, volumeters, or similar devices, shall be supplied directly from the supply pipes.

RULE 53. All water-closets must have flushing rim bowls.

RULE 54. Water-closets to be supplied from flushing tanks.—Water-closets within buildings shall be supplied with water from special tanks or cisterns, which shall hold not less than 6 gallons, when full to the level of the overflow pipe, for each closet supplied, excepting automatic or syphon tanks, which shall hold not less than 5 gallons for each closet supplied. A group of closets must not be flushed from the same tank, excepting flush meters, volumeters, or similar devices. The water in said tanks must not be used for any other purpose.

RULE 55. Water-closets for tenement houses.—In no case will the water-closet system of tenement or lodging houses be permitted in cellars, basements, or under sidewalks.

RULE 56. Number of closets required.—In all sewer-connected, occupied buildings, there must be at least one water-closet, and there must be additional closets so as there will never be more than 15 persons per closet. In lodging houses, where there are more than 15 persons on any floor, there must be an additional water-closet on that floor for every 15 additional persons or fraction thereof.

RULE 57. Water-closet apartments.—In tenement houses, lodging houses, factories, workshops, and all public buildings the entire water-closet apartments and side walls to a height of 16 inches from the floor, except at the door, must be made waterproof with asphalt, cement, tile, or other waterproof material, as approved by the board of health. In tenement houses and lodging houses the water-closets and urinal apartments must have a window or windows opening into the outer air, of sufficient size, all of which shall be shown on plans, and shall be subject to the approval of the board of health, except that tenement or lodging houses three stories or less in height may have such window opening on a ventilating shaft, not less than ten square feet in area. In all buildings the outer partition of such apartments must extend to the ceiling or be independently ceiled over, and these partitions must be air-tight. The outside partitions must include a window opening to outer air on the lot whereon the building is situated, or some other approved means of ventilation must be provided. When necessary to properly light such apartments, the upper part of the partitions must be of glass. The interior partitions of such apartments must be dwarf partitions.

RULE 58. Construction of urinals.—All urinals must be constructed of materials impervious to moisture and that will not corrode under the action of urine. The floor and walls of urinal apartments must be lined with similar nonabsorbent and noncorrosive material.

RULE 59. Urinal platforms.—The platforms or treads of urinal stalls must not be connected independently to the plumbing system, nor can they be connected to any safe waste pipe.

RULE 60. Iron trough water-closets and trough urinals.—Iron trough water-closets and trough urinals must be porcelain, enameled, or galvanized cast iron.

RULE 61. All water-closets and other fixtures.—All water-closets and other fixtures must be provided with a sufficient supply of water for flushing to keep them in the proper and cleanly condition.

RULE 62. Flush pipes.—Water-closet flush pipes must not be less than $1\frac{1}{4}$ inches, and urinal flush pipes one-half inch in diameter.

RULE 63. Lining for closets and urinal cisterns.—The copper lining of water-closets and urinal systems must not be lighter than 12-ounce copper, and must be stamped on lining with maker's name. Where lead is used for lining, it must not weigh less than 4 pounds to the square foot. All other materials are prohibited.

RULE 64. Fixtures prohibited.—Wooden wash trays, sinks, or bathtubs are prohibited inside of buildings. Such fixtures must be constructed of nonabsorbent material. Cement or artificial stone tubs will not be permitted, unless approved by the board of health.

RULE 65. Yard water-closets.—Water-closets, when located in yard, must be so arranged as to be conveniently and adequately flushed, and the water supply pipes and traps protected from freezing, by being placed in a hopper pit, at least 4 feet below the surface of the ground, the walls of which pit shall be constructed of hard-burned brick, or stone, laid in cement mortar, or of concrete. The walls for pit, where 1 closet is installed, may be 4 inches in thickness; or salt-glazed sewer pipe, 36 inches in diameter, may be used. Where pit is for more than 1 closet, the wall shall be 9 inches in thickness. The soil pipe and traps used inside pit must be extra heavy cast iron, and the trap to have handhole for clean-out purposes, with clean-out calked in. If the closet is located in the rear of a soil or vent pipe, the drain on which it is located shall be vented with a 4-inch pipe, carried above roof of closet, away from any opening or window. All outside closets shall be of the tank pattern. The water to be supplied to tank through an automatic seat-action valve. The waste from valve may be permitted to discharge into house drain on the house side of trap. The inclosure of yard water-closet shall be ventilated by slatted openings and there shall be a trapdoor of sufficient size to permit of convenient access to the hopper pit; or tank may be placed

in house, operated with chain and pulley through wall. Pitless closet may be used, in which case clean-out must be brought out above closet floor.

RULE 66. Cesspools and privy vaults.—No privy vault, or cesspool for sewage, shall hereafter be constructed in any part of the city, where a sewer is at all accessible, which shall be determined by the board of health; nor shall it be lawful to continue a privy vault or cesspool on any lot, piece, or parcel of ground abutting on or contiguous to any public sewer, within the city limits. The board of health shall have the power to issue notice, giving at least three months' time, to discontinue the use of any cesspool and have it cleaned and filled up. No connection for any cesspool or privy vault shall be made with any sewer; nor shall any water-closet or house drain empty into a cesspool or privy vault.

RULE 67. In districts where no sewer exists.—In rural districts, or districts where no sewer exists, privy vaults shall not be located within 2 feet of party or street line, nor within 20 feet from any building. Before any privy vault shall be constructed, application for permission therefor shall be made to the board of health; and such privy vault shall have 9-inch walls, constructed of hard-burned brick, or stone, laid in cement mortar, or of concrete, with bottom and sides cemented so as to be watertight; size to be not less than 4 feet in diameter and 6 feet deep.

RULE 68. Material and workmanship.—All material used in the work of plumbing and drainage must be of good quality and free from defects. The work must be executed in a thorough and workmanlike manner.

RULE 69. No person allow name to be used.—No person, firm, or corporation, carrying on the business of plumbing and house drainage, shall allow his or her name to be used by any person, directly or indirectly, either to obtain a permit or permits or to do any work under his or their license.

RULE 70. Terms used.—The term "private sewer" is applied to main sewers that are not constructed by and under the supervision of the department of public works.

The term "house sewer" is applied to that part of the main drain or sewer extending from a point 5 feet outside of the outer wall of a building, vault, or area to its connection with public sewer, private sewer, or cesspool.

The term "house drain" is applied to that part of the main horizontal drain and its branches inside the walls of the building, vault, or area, and extending to and connecting with the house sewer.

The term "soil pipe" is applied to any vertical line of pipe extending through the roof, receiving the discharge of one or more water-closets with or without other fixtures.

The term "waste pipe" is applied to any pipe extending through roof, receiving the discharge from any fixture, except water-closets.

The term "vent pipe" is applied to any special pipe provided to ventilate the system of piping, and to prevent trap syphonage and back pressure.

RULE 71. Changes to be made.—Whenever it shall come to the knowledge of the board of health, or complainant in writing shall be made by any citizen, that the plumbing or drainage in any building has become a nuisance, or is contrary to the provisions and requirements of these rules, or the ordinances of the city, or is of faulty construction, and liable to breed disease or endanger the health of the occupants, or upon the request of any owner or occupant of any building fitted with plumbing or drainage prior to the passage of these rules, then the board of health shall direct the proper officer to examine the plumbing or drainage in any such building, and the said officer shall make a drawing of the plan of said plumbing, drainage, and sewer and ventilating shaft connections. He shall report his findings in writing to the board of health and suggest such changes as are necessary to make the same conform to the rules governing such matters.

The board of health shall thereupon notify the owner or agent of any such building of the changes which are necessary to be made in said plumbing or drainage. Said changes shall be made within the time fixed by the board of health; and upon refusal or neglect to obey such orders, the board of health shall institute legal proceedings to have such changes made and said nuisance abated, by action before a justice of the peace or court of record, in which said action the owner or agent of said building may show in defense that the plumbing or drainage was not a nuisance, or was not of faulty construction or out of repair, and, in case of a building constructed subsequent to the passage of these rules, said plumbing or drainage was not contrary to the provisions and requirements of these rules or the ordinances of the city.

RULE 72. First inspection.—When drain, soil, waste, vent, and other pipes in the building connected or to be connected with the sewer have been placed in position, a preliminary water or air test of the same shall be applied, in the presence of an officer of the board of health.

RULE 73. Final test.—When the work has been completed, a final notice shall be filed with the board of health, when a final air or peppermint test shall be made, in

presence of said officer; when, if found satisfactory, a certificate of approval of the work will be issued; but no such plumbing or drainage work or system shall be used until said test has been made and certificate issued.

RULE 74. *Inspection.*—When work is ready for inspection, the plumbing contractor shall make such arrangements as will enable the proper officer to reach all parts of the building easily and readily, and also have present the proper apparatus and appliances for making said tests, and furnish such assistance as may be necessary to a proper application of the same.

RULE 75. *In case of disputes.*—In case of any dispute or difference of opinion existing between the board of health and any person, firm, or corporation as aforesaid regarding the construction of plumbing, house drainage, or cesspools, the same shall be submitted by either party to the presiding officer of the board of health, who shall pass upon the same, and whose findings therein, after hearing, shall be final and conclusive upon all parties.

RULE 76. *Violations and fines.*—Any person or persons who shall fail to comply with any of the provisions of these rules, regarding the procuring of a license or certificate to engage in or work at the business of plumbing or house drainage, shall be liable to a fine of not less than \$10, nor exceeding \$50, for each and every day he or they shall engage in or work at said business, without first having obtained said certificate or license; and any person or persons who shall violate any of the rules, regulations, or requirements set forth in these rules, regarding the construction, reconstruction, or testing of plumbing, house drainage, or cesspools, shall be liable for every such offense, to a fine of not less than \$10, nor more than \$50.

All fines and penalties imposed by these rules shall be recoverable by summary proceedings before any alderman of the city of Reading, and all suits or actions at law instituted for the recovery thereof shall be in the name and for the use of the city of Reading, and upon recovery thereof, all such fines and penalties shall be paid to the city treasurer thereof. In default of the payment of any fine or penalty imposed by any alderman, under the provisions of these rules, the person or persons so offending may be committed to the jail, workhouse, or other penal institution for a period not exceeding 30 days.

RULE 77. All rules and regulations previously adopted and inconsistent with the foregoing rules are hereby repealed.

[Ordinance, board of health, adopted June 12, 1911.]